Section II. CDMRP Accomplishments

CONTENTS

CDMRP

Background

The Congressionally Directed Medical Research Programs (CDMRP) vision is to be the preferred and responsive source for accessible research funding, shaping the future of health care to prevent, control, and cure diseases. To meet this vision, the CDMRP has made advances in management execution strategies and development of innovative award mechanisms that reflect this commitment.

The CDMRP can report accomplishments in three broad areas. The first area is advancement in management execution strategies. These practices emphasize the CDMRP's efforts to streamline program execution in an effort to simplify the award submission, review, and funding processes for applicants. The second area is CDMRP's commitment to provide award opportunities that represent areas of highest priority and greatest need. The third is scientific achievements made as a result of research supported by CDMRP awards. For information on research accomplishments related to specific programs, see Sections III–VIII.

Advances in Management Execution Strategies

The CDMRP has been a pioneer in exploring innovative program management processes, many of which are now being adopted by other funding agencies. The innovative execution processes that have been developed and implemented in the past year have dramatically facilitated the award submission, review, and funding processes for applicants.

——*Electronic Proposal Submission and Review*

To streamline program management, the CDMRP is committed to moving from paper-based to electronic-based processes and has made several innovative advancements in this area (see related box story). In the past year, the CDMRP implemented an electronic submission process for all neurofibromatosis (NF) award mechanisms. Fiscal year 2001 (FY01) Neurofibromatosis Research Program (NFRP) Program Announcements and Proposal Cover Booklets were available electronically on the CDMRP web site. Applicants were required to electronically submit their proposal as a Portable Document Format (PDF) file through the Internet. Peer reviewers were offered the option of receiving their proposals in electronic format. The CDMRP anticipates conducting all of its programs electronically in the near future, which will dramatically facilitate the proposal submission, review, and funding processes for all applicants.

Electronic Innovations

We are living in the electronic age. The CDMRP has been using electronic technology to improve and facilitate program management since 1995. Electronic innovations can be exciting and novel, thus attracting attention. However, their true utility is to save time and money and improve efficiency. The following highlights some of the electronic innovations used by the CDMRP over the past 7 years.

1995 A scannable Proposal Cover Booklet form that collects investigator and proposal demographics was introduced, replacing a paper one. This scannable booklet has resulted in significant program management cost and time savings.

1997 A Programmatic Review database was first used. This database assists Integration Panels during the second tier of review by providing instantaneous information relevant to portfolio balance, an important criterion for making funding recommendations.

1998 The CDMRP web site was launched, serving as a primary means to quickly disseminate information about the CDMRP.

1999 Paperless Contracting was enhanced through the introduction of an electronic document to initiate funding and negotiations of individual awards. This internally used document led to saving more than one-half of a man-year of labor associated with the processing and tracking of CDMRP's research awards. This electronic transmission of award data also allows for parallel versus sequential processing and shortens the negotiation time for the U. S. Army Medical Research and Materiel Command (USAMRMC) and the award recipient.

2000 The first electronic submission was offered by the CDMRP for a single award mechanism within a program. Concept proposals were submitted via electronic application forms through the CDMRP web site and via email.

2000 A Scientific Peer Review Electronic Scoring System was used for the first time. This electronic scoring system is used by scientific peer review panel participants and consists of personal data assistants and customized software. The electronic scoring system streamlines the scientific peer review process and increases the efficiency of the scoring process.

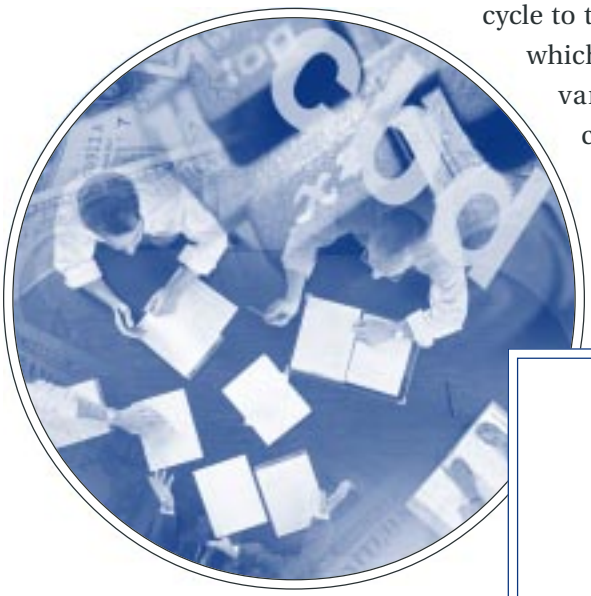
2001 Electronic Submissions were offered for the first time for all award mechanisms within a program. FY01 NFRP applicants submitted PDF files via a web-based system. This electronic submission eliminates the need for 30 copies of each proposal, a significant time and cost savings for applicants. These proposals were also reviewed electronically for additional savings. ✦

——*Streamlining the Award Negotiation Process for Investigators and Institutions*

To expedite the awards process, specific instructions for completing regulatory requirements for Human Use, Animal Use, and Safety Plans were restructured. One of the biggest changes was to the Safety Program Plan. Prior to FY01, all awardees were required to submit a cumbersome Facility Plan that described the institution facility. The Office of Regulatory Compliance and Quality (RCQ) is now working with the Facility Safety Director/Manager of individual institutions to address facility-wide safety requirements that are applicable to all applicants from their organizations. Institution-based safety plans will be eligible for multiyear approvals. A list of institutions with approved Institution-Based Safety Plans is posted on the RCQ page of the USAMRMC web site (http://mrmc-army.mil). Future CDMRP awardees only have to prepare a one- to two-page Safety Plan that describes issues related specifically to their proposal. This change should significantly expedite the negotiation review and award processing and lessen the workload on both the institutions and investigators.

CDMRP Responsiveness through Award Mechanisms

One of the characteristics of the CDMRP is its ability to adapt each program cycle to the individual needs of each research program. One means by which the CDMRP addresses these individual needs is to utilize a variety of award mechanisms to stimulate research that is considered important for that fiscal year. The different award mechanisms have allowed the CDMRP to fill unique niches and complement funding opportunities offered by other agencies.



——Innovative Research Awards

In 1993, a recommendation was made to the USAMRMC by the Institute of Medicine (IOM) to "create an environment in which creative ideas and first-rate research can flourish and in which investigators are not afraid to gamble on risky but alluring ideas."[1] Many of the award mechanisms offered by the CDMRP emphasize support for research on creative and novel ideas to stimulate new directions in research. While each mechanism has different award requirements, all share a common goal of fostering innovative ideas and technology.

The CDMRP has funded 1,813 awards through three mechanisms that specifically encourage innovative scientific ideas and approaches to disease eradication. These awards have made significant contributions to our understanding of disease processes, the development of therapeutics, and the improvement of quality of life. Table II–1 summarizes the number of awards made and the dollars invested from FY93–00 appropriations for support of novel ideas.

——Building Infrastructure

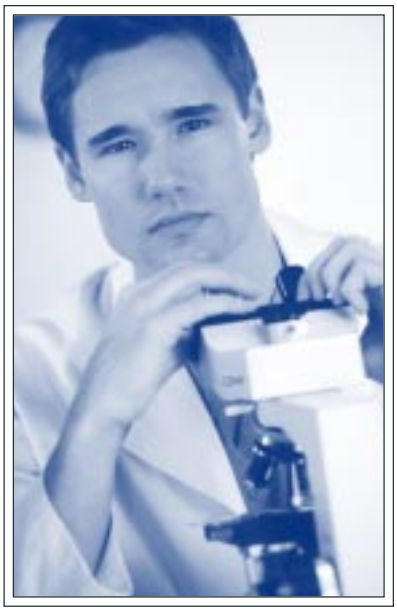
In the 1993 IOM report, it was noted that "research in breast cancer is impeded by the inadequate access to resources that are appropriate for sharing—including tumor samples, cell lines, animal models, DNA probes, follow-up data on women diagnosed with breast cancer, information about ongoing clinical trials, and economic data to evaluate the cost of care."[1] Based on this clear need in 1993, and the need for similar support identified by Integration Panels (IP) in subsequent years, the CDMRP has funded infrastructure awards across most of

Table II–1. Summary of Awards from FY93–00 Appropriations That Foster Novel Ideas

Award Mechanism	Program and Years Implemented	Number of Awards	Dollars Invested
Concept	FY99–00[1] BCRP	301	$22.9M
Idea/Idea Development	FY93–00 BCRP FY97–00 PCRP FY99–00 NFRP FY99 OCRP	1,349	$461.0M
New Investigator	FY97–00 PCRP FY99–00 NFRP FY99–00 OCRP	163	$52.7M
Total		**1,813**	**$536.6M**

[1] Concept Awards were offered by the FY99 BCRP. Awards were supported by both FY99 and FY00 appropriations.

[1] *Strategies for Managing the Breast Cancer Research Program: A Report to the U.S. Army Medical Research and Development Command*, National Academy of Sciences Institute of Medicine, 1993.



its programs. These awards are designed to provide researchers with support to (1) create or obtain materials and data from multiple sources that would otherwise be difficult to acquire, or (2) establish and support centers or consortia that can provide a foundation for future research. Award mechanisms developed by CDMRP IPs to enhance infrastructure are listed in Table II–2.

- The FY00 Breast Cancer Research Program (BCRP) recognized a need for additional behavioral science infrastructure to encourage and support behavioral breast cancer research. Four Behavioral Centers of Excellence were funded to provide foundations for future research.
- The Ovarian Cancer Research Program (OCRP) has emphasized the need for multiple disciplines and institutions to work together on related ovarian cancer issues. Over the past 5 years, the OCRP offered Program Project Awards and funded eight centers to establish regional centers for the study and treatment of ovarian cancer.
- The FY01 Prostate Cancer Research Program (PCRP) offered support for Prostate Cancer Consortium Development Awards. Recipients of these awards will have an opportunity to compete for Prostate Cancer Consortium Awards in FY02 (pending availability of funds). Consortium Awards will bring together the Nation's leading prostate cancer researchers, through multidisciplinary/multi-institutional collaborations, to focus on critical areas of prostate cancer research.

Table II–2. Number of CDMRP Infrastructure Awards from FY92-00

Infrastructure Award Mechanism	Program and Years Implemented		Number of Awards	Dollars Invested
Behavioral Center of Excellence	FY00	BCRP	4	$22.7M
Cancer Center Initiation/ Program Projects	FY93–95 FY99 FY97, 98, 00	BCRP PCRP OCRP	19	$46.2M
Collaborative-Clinical Translational Research	FY99–00	BCRP	3	$5.5M
Infrastructure Enhancement for Research Support	FY93/94	BCRP	28	$23.4M
Mammography/Breast Imaging Equipment	FY92	BCRP	2	$4.1M
Natural History Studies	FY97	NFRP	2	$5.7M
Special Mammography Demonstration Projects	FY95	BCRP	8	$11.4M

——Support for Training and Recruitment

In the 1993 IOM report, it was stated that the "best investment the program can make is to stimulate talented new investigators…" Thus, training is a common research priority among most programs. Almost one-third of all awards made through programs managed by the CDMRP have focused on training/recruitment (Table II–3).

The CDMRP's flexibility is evident when one reviews the spectrum of awards to stimulate talented new investigators, as illustrated in Table II–3. CDMRP has created mechanisms to support both new researchers in the field and established scientists interested in extending their expertise to the study of other diseases. The CDMRP has offered Training and Recruitment Awards in the form of Undergraduate Summer Training Programs, Predoctoral Traineeships, Postdoctoral Traineeships, Institutional Training Programs (predoctoral and postdoctoral trainees), Sabbaticals, Collaborative Training Awards, and Career Development Awards. The CDMRP has also been able to focus some training awards toward areas of particular need. For example, the BCRP recognized a need for additional translational researchers. Therefore, they offered both Postdoctoral and Career Development Awards that were specifically targeted toward increasing the number of investigators involved in clinical translational research.

The ultimate goal of building a foundation for future research is being met. Preliminary indications are that these training and recruitment award mechanisms are successful in encouraging productive new investigators to enter the field of cancer research.

Table II–3. Number of CDMRP Training and Recruitment Awards from FY93–00

Training/Recruitment Award Mechanism	Program and Years Implemented		Number of Awards	Dollars Invested
Undergraduate Summer Training Program	FY00	BCRP	6	$0.7M
Predoctoral	FY93–00	BCRP	397	$24.5M
Postdoctoral	FY93–00 FY99–00 FY96–00	BCRP PCRP NFRP	428	$49.3M[1]
Institutional Training	FY93/94, 98–99	BCRP	34	$19.9M
Career Development	FY93–00	BCRP	147	$31.2M
Sabbaticals	FY93/94, 96–97	BCRP	8	$0.8M
Minority Population Focused Training	FY98–00	PCRP	24	$1.3M
HBCU/MI[2] Training	FY99–00	BCRP	7	$3.6M
Total			**1,052**	**$131.3M**

[1] The NFRP offered support for postdoctoral trainees as nested traineeships within Investigator-Initiated Research Awards; dollars invested for the 26 Postdoctoral traineeships are not available.

[2] Historically Black Colleges and Universities/Minority Institutions.

"This training allowed me to gain admission to a top health psychology internship and a postdoc fellowship focused on psychosocial intervention for breast cancer."

"I believe this program allowed me to investigate breast cancer on a different level. Interaction with other trainees allowed me to see breast cancer as a global problem that must be investigated by multiple disciplines."

"Excellent program that I was proud to be a part of. Thanks!"

"The award…showed that I can effectively compete for future funding, which was absolutely crucial to be hired…for my current position."

"I would not have been able to afford graduate school. Because of the training award, I now have a career in breast cancer research."

"What a wonderful program to train researchers to focus on the breast cancer solution!"

"This award…gave me the opportunity to meet the local breast cancer support groups and made me fully appreciate the reason behind this research."

Feedback from FY93-94 BCRP Predoctoral Trainees

Scientific Achievements

The CDMRP has funded over $1.2 billion (B) in biomedical research from FY92–00. This has resulted in 3,516 research grants, contracts, and cooperative agreements being awarded in the 16 programs managed by the CDMRP (Table II–4).

Table II–4. FY92–00 Awards Managed by the CDMRP

Program (Fiscal Years)	Grants Managed	Funds Awarded[1]
BCRP (FY92–00)	2,837	$890.8M
PCRP (FY97–00)	439	$176.2M
NFRP (FY96–00)	65	$43.6M
OCRP (FY97–00)	40	$33.1M
PRMRP (FY99–00)	30	$35.2M
DOD/VA (FY99/00)[2]	9	$6.0M
DWHRP (FY95)[3]	69	$32.8M
ORP (FY95)[4]	5	$3.7M
Institutionally Based Research Programs (FY99)[5]	22	$48.5M
Total	**3,516**	**$1,269.9M**

[1] Funds awarded reflect monies obligated to contracts, grants, and cooperative agreements for research. For information on withholds and overhead costs for each congressional appropriation, see Appendix B of this report.
[2] Cooperative Department of Defense/Veterans Affairs Medical Research appropriations were combined under one program.
[3] Defense Women's Health Research Program.
[4] Osteoporosis Research Program.
[5] Includes Advanced Cancer Detection, Alcoholism Research, Center for Prostate Disease Research, Coastal Cancer Control, Computer-Aided Diagnosis, Diagnostic and Surgical Breast Imaging, Gallo Cancer Center, Lung Cancer, and Post-Polio Syndrome.

Scientific advances arising from these awards are expected to have an impact on the targeted diseases. The CDMRP is also committed to funding a diversified portfolio of research efforts. These awards cover 14 major scientific areas encompassing basic, clinical, and population-based research (Figure II–1). The cumulative accomplishments of all 16 programs within the CDMRP are noteworthy and can be measured by the number of resultant publications, abstracts, presentations, and patents/licensures reported by awardees. This

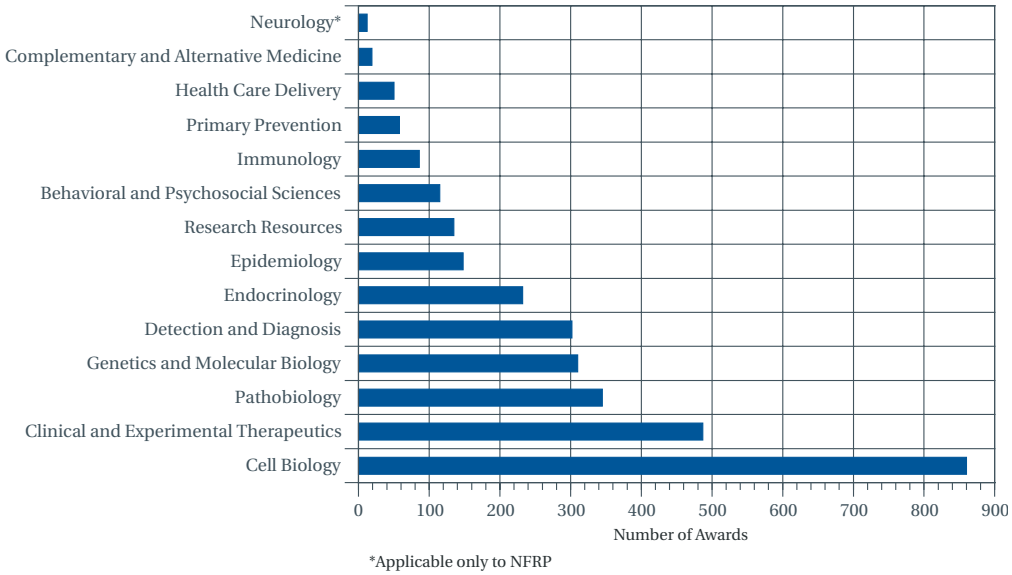


Figure II–1. Summary of FY92–00 CDMRP Portfolio for the BCRP, PCRP, OCRP, and NFRP

information is summarized in Table II–5. In an effort to efficiently disseminate information about research accomplishments, the CDMRP now lists publications, self-reported by awardees, with the corresponding proposal abstract on the web site http://cdmrp.army.mil. Each Program's achievements are discussed in more detail in the corresponding program sections (Sections III–VIII) of this report.

The CDMRP believes that by working together we will be able to shape the future of health care. The future is now, as evidenced by the research accomplishments that are described throughout this annual report.

Table II–5. Outcomes Reported by Awardees

Publications in Scientific Journals	>3,900
Abstracts/Presentations at Professional Meetings	>3,000
Patents/Licensures (including applications)	>130